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per liter of succinic acid mixed with some acetic and some butyric acid. Contrary to the statements of some workers, oxalic and lactic acids are not produced. He believes that the succinic acid is formed from sugar and not from any amino-acid.—H. HASSELBRING.

**Current taxonomic literature.**—G. E. OSTERHOUT (Muhlenbergia 8:44, 45. 1912) characterizes a new *Cogswellia* (*C. concinna*) and a new variety of *Gnaphalium* (*G. decurrens* var. *glandulosum*) from Colorado.—O. PAULSEN (Arb. Bot. Have Kb. no. 65. 303–318. 1911) under the title “Marine plankton from the East-Greenland Sea” records the Peridinales found on the Danish Expedition to Greenland in 1906–1908 and describes a new species of *Peridinium* (*P. varicans*), also a new species doubtfully referred to *Apodinium*.—W. H. RANKIN (Phytopathology 2:28–31. pl. 3. 1912) describes and illustrates a new fungus (*Sclerotinia Panacis*) which is said to be the cause of a root-rot of ginseng; it was found near Apulia, N.Y.—A. B. RENDLE, E. G. BAKER, S. MOORE, and A. GEPP (Journ. Linn. Soc. Bot. 40:1–245. pls. 1–7. 1911) have published an important paper entitled “A contribution to our knowledge of the Flora of Gazaland.” The paper includes a general descriptive account of the country concerned, records about 1000 species of which approximately 180 are new to science. The plants were collected by Mr. C. F. M. SWYNNERTON and the types are deposited in the herbarium of the British Museum.—R. A. ROLFE (Bot. Mag. t. 8417. 1912) describes and illustrates a new species of *Stanhopea* (*S. peruviana*) from Peru, and (Kew Bull. 131–135. 1912) has published several new species of orchids including 4 from Panama and South America.—E. ROSENSTOCK (Rep. Sp. Nov. 10:274–280. 1912) under the title “Filices costaricensis” has published 11 new species of ferns.—P. A. RYDBERG (Torreya 12:1–11. 1912) in continuation of studies of the plants collected on the Peary arctic expeditions gives a list of the plants secured by Drs. WOLF and GOODSELL; the article includes a new species of *Conioselinum* (*C. pumilum* Rose) from Labrador. The same author (Bull. Torr. Bot. Club 39:99–111. 1912) under “Studies on the Rocky Mountain flora XXVI” describes a new species in *Deschampsia* and one in *Anticlea*. Two new generic names are proposed, namely *Hesperochloa*, based on *Poa* (?) *Kingii* Wats., and *Dipterostemon*, based on *Brodiaea capitata* Benth.—C. S. SARGENT (Rep. Mo. Bot. Gard. 22:67–83. 1911) under the heading “Crataegus in Missouri II” has described 14 new species.—A. K. SCHINDLER (Rep. Sp. Nov. 10:403, 404. 1912) has published a new genus (*Kummerowia*) based on *Hedysarum striatum* Thunb. a species common to the New and Old World.—H. SCHINZ (Vierteljahrsschrift Naturf. Gesells. Zürich 56:229–268. 1911) in an article “Beiträge zur Kenntnis der afrikanischen Flora” has proposed the following new genera belonging to the Amarantaceae: *Centemopsis*, *Nelsia*, *Neocentema*, and *Lopriorea*.—R. SCHLECTER (Rep. Sp. Nov. 10:248–254, 291–296, 352–363, 385–397, 445–461. 1911–1912) under the title “Orchidaceae novae et criticae” has published about 70 new species of orchids from Central and

South America. One new genus (*Neokoehleria*) is included from Peru.—The same author (Orchis 6:6–10. pl. 1. 1912) has published new species of orchids, 2 of which are from Colombia.—F. J. Seaver (Mycologia 4:45–48. pl. 57. 1912) gives an account of the genus *Lamprospora* and adds 2 new species.—C. P. SMITH (Muhlenbergia 7:136–138. 1912) records a new variety of violet (*Viola Beckwithii* var. *cachensis*) from northern Utah.—O. STAFF (Hooker's Ic. IV, 10: t. 2947. 1911) describes and illustrates a new genus (*Teonongia*) of the Moraceae from Tonkin; the same author (*ibid.* tt. 2949, 2950) describes and illustrates two new genera (*Lintonia* and *Dignathia*) of the Gramineae from British East Africa.—P. C. STANDLEY (Proc. Biol. Soc. Wash. 24:243–250. 1911) presents a synopsis of the American species of *Fagonia*, recognizing 12 species, 4 of which are new to science. The same author (Smith. Misc. Coll. 56: no. 33. 1–3. 1912) has described 3 new species of flowering plants from Alberta, and (*ibid.* no. 34. 1–3. pl. 1) describes and illustrates a new species of *Viorna* (*V. Ridgwayi*) from southern Illinois.—F. STEPHANI (K. Sv. Vet. Akad. Handl. 46: no. 9. 1–92. 1911) presents the results of an investigation of the Hepaticae collected on the Swedish expedition to Patagonia and Tierra del Fuego in 1907–1909; about 145 species are described as new to science. The types are deposited in the herbarium of the Botanical Museum at Upsala. The same author (Sp. Hep. 4:641–736. 1911) continues his treatment of the Hepaticae and includes several new species from America belonging mainly to *Frullania* and *Archilejeunea*.—C. TORREND (Broteria Ser. Bot. 10:29–49. 1912) under the title of “Deuxième contribution pour l'étude des champignons de l'île de Madère” describes several species new to science and proposes a new genus (*Vermiculariopsis*) of the Sphaeropsidaceae.—W. TRELEASE (Rep. Mo. Bot. Gard. 22:37–65. pls. 18–72. 1911) presents an illustrated account of the agaves of Lower California with a synopsis of the 25 reorganized species of which 17 are new to science; and (*ibid.* 85–97. pls. 73–99) gives a “Revision of the agaves of the group APPLANATAE,” to which group 10 species are referred, 5 being hitherto undescribed; and (*ibid.* 99, 100. pls. 100–103) characterizes a new variety of *Agave* (*A. angustifolia* var. *Sargentii*) based on plants in cultivation at the Missouri Botanical Garden; and (*ibid.* 101–103. pls. 104–108) records 2 new species of *Yucca* from Texas and adjacent Mexico.—W. WANGERIN (Rep. Sp. Nov. 10:273. 1912) has published a new species of *Mastixia* (*M. philippinensis*) from the island of Luzon, P.I.—E. J. WELSFORD (Ann. Botany 26:239–242. 1912) gives an account of an alga found in an aquarium associated with *Azolla caroliniana* which was imported from North Carolina. The author has given the alga the name of *Trichodiscus elegans*.—H. F. WERNHAM (Journ. Bot. 49:317, 318. 1911) has published a new genus (*Pteridocalyx*) of the Rubiaceae from Demerara.—Different authors (Kew Bull. 35–44. 1912) have published several new species of flowering plants including 2 new species of *Columnea* from Guatemala and Venezuela, and a new *Zschokkea* from Peru; and (*ibid.* 90–107) under the title “Diagnoses

africanae XLVI" several new species are described, and the following new genera are proposed: *Isoberlinia* and *Paradaniellia* of the Leguminosae, and *Klaineanthus* and *Hamilcoa* of the Euphorbiaceae.—J. M. GREENMAN.

**Recent work among Filicales.**—DAVIS<sup>23</sup> has investigated the structure of *Peranema* and *Diacalpe*, Asiatic genera of ferns whose relationships have been somewhat doubtful. Both genera are polystelic; and while in *Peranema* the short-stalked sorus is a mixed one, with a receptacle of the Gradatae type and traces of a basipetal succession of sporangia, in *Diacalpe* the mixed sorus shows no traces of basipetal succession. Moreover, in *Peranema* the annulus is slightly oblique, while in *Diacalpe* it "is vertical in insertion, but slightly twisted in its course across the sporangial head." Both show relationships to species of *Nephrodium*, but are most nearly related to *Woodsia* and *Hypoderris*, and fall naturally into the Woodsiae-Woodsiinae group of Polypodiaceae," a group that is regarded as intermediate between Cyatheaceae and the Aspidieae. The conclusion is suggested that the *Aspidium* forms have come from a Gradatae ancestry, and "that *Peranema* and *Diacalpe* are relatively early members of a phyletic drift to the Polypodiaceae."

BOWER<sup>24</sup> has used a study of *Alsophila* (*Lophosoria*) *pruinata* as the basis for a discussion of an important phyletic sequence. *Lophosoria* is shown to be a more primitive type than the true species of *Alsophila* and worthy of generic separation from that genus. The phyletic relations with *Struthiopteris*, *Onoclea*, *Cystopteris*, *Acrophorus*, *Peranema*, *Diacalpe*, *Woodsia*, and *Hypoderris* are discussed and the following "progressions" announced: (1) the frequent dichotomous branching in Gleicheniaceae becomes rarer in the higher types, and the creeping axis of the earlier forms becomes ascending or erect in some of the later ones"; (2) "the peculiarities of the original gleicheniaceous type of leaf are shown in reminiscent details in the Cyatheaceae, but lost elsewhere"; (3) progression from primitive hairs to scales; (4) progression from the proto-stele of § MARTENSIA of *Gleichenia* to the solenostele of *G. pectinata* and *Lophosoria*, and the polystele of all other members of the series; (5) progression from the Simplicies type of sorus (*Gleichenia* and *Lophosoria*) to the Gradatae type in Cyatheaceae, and finally to the Mixtae type in *Hypoderris*, *Peranema*, and *Diacalpe*, "a condition leading probably to that of the Aspidieae"; (6) progression from a larger spore-output and an oblique annulus to a smaller output and a vertical annulus; (7) progression from a larger sperm-output to a smaller one.

This series is believed by BOWER to constitute a true phylum, a phylum quite distinct from that of the ferns with originally marginal sori. The prob-

<sup>23</sup> DAVIS, R. C., The structure and affinities of *Peranema* and *Diacalpe*. Ann. Botany **26**: 245-268. pls. 28, 29. 1912.

<sup>24</sup> BOWER, F. O., Studies in the phylogeny of the Filicales. II. *Lophosoria*, and its relation to the Cyatheoideae and other ferns. Ann. Botany **26**: 269-323. pls. 30-36. 1912.